

Title (en)

NANOSTRUCTURED DIELECTRIC COMPOSITE MATERIALS

Title (de)

NANOSTRUKTURIERTE DIELEKTRISCHE VERBUNDWERKSTOFFE

Title (fr)

MATERIAUX COMPOSITES DIELECTRIQUES NANOSTRUCTURES

Publication

EP 1858969 A4 20141008 (EN)

Application

EP 06733959 A 20060126

Priority

- US 2006002892 W 20060126
- US 4448905 A 20050127

Abstract (en)

[origin: US2006167139A1] A nanocomposite material suitable for electrical insulation includes a polymer compounded with a substantially homogeneously distributed functionalized nanoparticle filler. The nanocomposite material is produced by compounding the polymer with the functionalized nanoparticle filler by imparting a shear force to a mixture of the polymer and filler capable of preventing agglomeration of the filler whereby the filler is substantially homogeneously distributed in the nanocomposite material. The electrical insulation may be adapted for AC or DC high voltage, and may also be adapted for low or medium voltage to prevent formation of water tree structures.

IPC 8 full level

C08K 9/06 (2006.01); **B82B 1/00** (2006.01); **H01B 3/00** (2006.01)

CPC (source: EP US)

B82Y 30/00 (2013.01 - EP US); **C08K 3/01** (2017.12 - EP US); **C08K 2201/011** (2013.01 - EP US); **Y10S 524/907** (2013.01 - EP US); **Y10S 977/779** (2013.01 - EP US); **Y10S 977/785** (2013.01 - EP US)

Citation (search report)

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- [XY] CH 664231 A5 19880215 - BRUGG AG KABELWERKE
- [XY] WO 2004034409 A1 20040422 - RENSSELAER POLYTECH INST [US], et al
- [XY] WO 02100931 A1 20021219 - EIKOS INC [US], et al
- [X] EP 1496522 A1 20050112 - SIEMENS WESTINGHOUSE POWER [US]
- [X] WO 02058928 A1 20020801 - NANOGRAM CORP [US]
- [Y] MYSLINSKI P ET AL: "The effect of silica surface modification on the dielectric properties of silica-filled epoxy compounds", MATERIALS CHEMISTRY AND PHYSICS, ELSEVIER SA, SWITZERLAND, TAIWAN, REPUBLIC OF CHINA, vol. 33, no. 1-2, 1 January 1993 (1993-01-01), pages 139 - 144, XP024148152, ISSN: 0254-0584, [retrieved on 19930101], DOI: 10.1016/0254-0584(93)90105-U
- [XY] DATABASE WPI Week 200429, Derwent World Patents Index; AN 2004-308609, XP002728875
- See references of WO 2006081400A2

Designated contracting state (EPC)

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DOCDB simple family (publication)

US 2006167139 A1 20060727; **US 7579397 B2 20090825**; EP 1858969 A2 20071128; EP 1858969 A4 20141008; US 2010036035 A1 20100211; US 7884149 B2 20110208; WO 2006081400 A2 20060803; WO 2006081400 A3 20071025

DOCDB simple family (application)

US 4448905 A 20050127; EP 06733959 A 20060126; US 2006002892 W 20060126; US 50503709 A 20090717